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Notice of Allowability	Application No.	Applicant(s)	
	10/717,116	HO ET AL.	
	Examiner	Art Unit	
	Cathy Lam	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on December 27, 2004.
2. ☒ The allowed claim(s) is/are 14-30.
3. ☒ The drawings filed on 27 December 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>03-21-2005</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

[Handwritten signature]

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Atty: Aaron Wininger on March 15th & 17th, 2005.

The application has been amended as follows:

In claim 14, on line 4 delete "first vias" and insert -- conductive vias --, on line 5 delete "first vias" and insert -- conductive vias --, on line 8 delete "to form" and insert -- between --, on line 12 delete "second vias" and insert -- conductive vias --.

In claim 17, on line 2 delete "between" and insert -- on --, delete "vias and one of said adjacent laminating layer and said core substrate" and insert -- conductive vias --.

In claim 20, on line 2 delete "thermal plastic" and insert -- thermoplastic --, on line 3 delete "thermal setting" and insert -- thermosetting --.

Replace the amended claim 21 as following:

21. A lamination multilayer substrate, at least comprising:

- a core substrate having a plurality of through holes therein; and
- a plurality of laminating layers stacked and laminated on said core substrate, wherein each said laminating layer has a dielectric layer with a first side and a second side, a patterned conductive layer positioned at the first side, and a plurality of conductive vias with a first ends and second ends positioned within the dielectric layer

and a barrier metal layer between the patterned conductive layer and the first end of the conductive vias, wherein the barrier metal layer is a stop layer between the patterned conductive layer and the conductive vias, and the first ends of the vias electrically connect with the patterned conductive layer and the second ends of the conductive vias electrically connect with an adjacent layer of one of said laminating layers and said core substrate, wherein said dielectric layers are bonded together.

In claim 24, on line 2 delete "between" and insert -- on --, after "vias and" insert -- between --, on line 3 delete "and said core substrate".

In claim 26, on line 2 after "disposed" insert -- on --.

In claim 27, on line 2 delete "first", delete "thermal plastic" and insert -- thermoplastic --, delete "thermal setting" and insert -- thermosetting --.

In claim 30, on line 2 after "disposed" insert -- on --.

Claims 31-35 have been canceled.


2. The following is an examiner's statement of reasons for allowance: there is no teaching in the prior art directed to a multilayer structure having a barrier metal layer between the conductive metal and the surface conductive pattern as claimed by the applicant.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Cathy Lam
Primary Examiner
Art Unit 1775

cfl
March 16, 2005